A RoADAR Resource: Advanced Driving in an EV, Hybrid or an automatic gearbox.

‘ADVANCED DRIVING/RIDING is the ability to control the position and speed of the vehicle safely, systematically and smoothly, using road and traffic conditions to progress unobtrusively with skill and responsibility.

This skill requires a positive but courteous attitude and a high standard of driving competence based on concentration, effective all round observation, anticipation and planning. This must be co-ordinated with good handling skills and honest self awareness.

The vehicle should be at the right place on the road at the right time, travelling at the right speed and can always be stopped safely on its own side of the road in the distance that can be seen to be clear.’
(DVSA, RoADAR, IAM 1997)

FOREWORD

Important though they undoubtedly are, pure handling skills are not enough to ensure complete safety while driving. Inattention, lack of concentration, and a cavalier attitude are major factors that cause many road traffic collisions and near-misses.

It is estimated that the average motorist uses only about 20% of their mental capacity to concentrate while driving which, you’ll agree, is a rather worrying thought. The advanced training techniques contained in this resouce are designed to enable you to become not just better than average, but the safest most skilful driver you can be.

What follows is derived from *Roadcraft (2020 the Police Driver’s Handbook* as well as *The Highway Code (2022)*.

A GUIDE TO ADVANCED DRIVING

The origins of the RoSPA Advanced Drivers & Riders (RoADAR) go back to 1955. At that time, Louise Duncan who was the road safety officer for the Borough of Finchley felt that she should try to do something about the rising tide of road accidents. She was very impressed by the standard of training and testing at the Police driving school in the nearby borough of Hendon and felt that some form of training and testing along these lines would be a great help for ordinary drivers.
With the help of a number of instructors from the police driving school, she formed the Finchley League of Safe Drivers. Members of the public could join the group, attend lectures and get advice on their driving, leading to a test. The group proved popular and, by 1960 the organisation had spread nationwide, becoming the League of Safe Drivers. In many parts of the country, local groups were formed to enable candidates to prepare for the test.

By 1980, the League had become large and management was proving difficult. RoSPA, who had always assisted the league, agreed to take over the management and it became the RoSPA League of Safe Drivers. In 1992, at the request of its members, it became the RoSPA Advanced Drivers' Association; however, in 2006 to reflect the diversity of tests became simply known as RoSPA Advanced Drivers & Riders. The organisation's advanced test remains unique in that it is the only advanced test to be graded and the only one where its members are asked to retake their test triennially.

The standards of the organisation are now approved and monitored by the Driving Standards Agency (DSA).

To help drivers and riders prepare for the organisation's advanced tests there is a network of local RoADAR groups located throughout the United Kingdom and in Ireland, run entirely by volunteers who provide free help and advice to their members.

TUITION

The tuition that these local groups provide is on a one-to-one basis using the member's own vehicle under the guidance of an experienced group tutor. Although there is normally no limitation on the number of lessons provided, it is not unusual for between twelve and twenty lessons to be taken before most members feel sufficiently prepared for their initial test. After the initial test, tuition is provided as and when requested on the lead-up to a re-test.

Please be sure to read the Important Information regarding tuition on the next page.

Every effort is made to ensure that the tuition provided always takes cognisance of the individual, their needs, abilities and experience.
Before tuition begins you are strongly advised to acquire a copy of the following current publications: *Roadcraft the essential Police Driver's handbook*, *The Highway Code* and *Know Your Traffic Signs*. The DVSA's *Driving, the essential skills* manual is also recommended.

This resource ought to be regarded as supplemental to these official publications and has been produced simply to reinforce the various advanced techniques introduced in *Roadcraft*, help underpin some of the essential aspects of advanced driving generally and act as an aid to tuition.

IMPORTANT INFORMATION
FOR CANDIDATES UNDERTAKING TUITION

As you embark on the road to advancing your driving skills, it is important that the journey is made as safely as possible for you, your tutor and other road users.

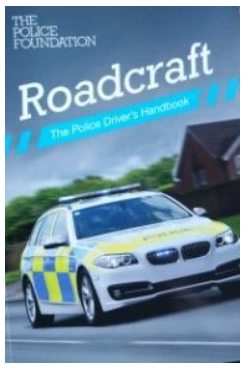
During practical tuition you are deemed to be in control of your vehicle at all times and responsible for your own actions while driving it.

If your tutor gives you an instruction, which you feel is unsafe you should do what you believe to be safe.

Candidates must be the holder of a full driving licence and ensure the vehicle is fully insured for them to drive and a current MOT certificate must be in force if applicable.

Any vehicle used for tuition must have a current vehicle excise licence and be in a roadworthy condition.

WHAT IS ADVANCED DRIVING?



The RoSPA Advanced Driving Training is based on the principles contained in *Roadcraft 2020* the Police Driver's Handbook, which is issued to all UK Police Officers undertaking an advanced driver training course and referenced in this guide to training document. The tried and tested way of driving taught to police officers creates a simple and consistent method of driving that ensures that the driver omits no detail, leaves nothing to chance, and when perfected, provides the one essential aspect of safe driving – time to react.

Just reading Roadcraft won't make you a better driver. Awareness of your personal risks, continual self assessment and regular and honest practice to improve your driving skills are essential elements of developing your advanced driving competences.

Drivers who develop their awareness of the human factors which can affect their driving performance and who are trained to advanced standard, do this by anticipating and positively controlling situations to reduce their crash risk and is a deliberate, skilful and responsible technique admired by others.

The ability to perceive, grade and assess a hazard[1] and anticipate danger, actual or potential, equips advanced drivers with the skills to plan and avoid those zones of danger; as opposed to using their skills or experience simply to escape from them providing them with the essential benefits of space and time, which enables them to react to the inappropriate actions of others proactively.

To reach this enviable state will not happen overnight. Depending on your individual ability, driving experience, and overcoming the natural resistance to learning that is common to many of us, will require hours of study, honest self assessment, practice and patience. The old adage that 'you only get out what you put in' is especially true; for even experienced advanced drivers who gain the highest grade possible, must continue to work on not only maintaining their standard, but also improving it if they can. The perfect driver hasn't nor ever will be born however, that shouldn't prevent anyone from at least striving for that perfection.

Throughout your tuition you will be taught the techniques of 'system' driving. If you systematically eliminate your driving faults and react positively to the tuition given you will be well prepared for not only your initial test, but for the triennial advanced tests that lie ahead. Learning new driving skills is a continuous process. It involves reviewing; adapting and updating your skills to keep pace with the ever changing and increasingly complex traffic environment — remember that good drivers never stop learning! Thank you for your support and good luck with your tuition, which I hope you will find not only beneficial, but also enjoyable after all, advanced driving is about enjoyment, skill and safety; it's not about speed and stress!

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[1] Any thing or situation that has the potential for danger. *Roadcraft* (p25).

BECOMING A BETTER DRIVER- Roadcraft Chapter 1

Important though they undoubtedly are, pure handling skills are not enough to ensure complete safety. Inattentiveness and lack of concentration are major contributory factors in road traffic collisions and near-misses. It is estimated that the average motorist uses only about twenty per cent of their mental capacity when driving which, you'll agree, is a rather worrying thought. Concentration in this context may be defined as the full application of mind and body to a particular endeavour to the complete exclusion of everything not relevant to that endeavour and is an essential part of safe, skilful driving. One way of improving concentration is by giving a running commentary as you drive so that all your attention is focussed on the task at hand and that which is not, is excluded. The advanced training techniques that you will be taught are designed to enable you to become not just better than average, but the safest, most skilful driver that you can.

Understanding how human factors influence not only your learning but every time you get into a vehicle to make a journey. Your ability to honestly self-assess the stresses of making your journey, your interaction with other road users and your own driving performance must be considered. Goals for Driver Education, GDE matrix (Roadcraft. Appendix 4 p280-281) will aid your understanding and application of this competence will reduce potential distractions. How we control the car (Level 1) and drive in traffic (Level 2) is a direct result of the motive for the journey (Level 3) and our personality (Level 4). Equally, the degree to which we are able to self-evaluate (Column 3) will directly affect the control we have over the vehicle (Level 1), or how we interact with other road users (Level 2), or the choices we make about the journey (Level 3), and the degree of responsibility and control we have over our own lives – and, therefore, the driving task (Level 4).

On the advanced test your examiner will be expecting at the very least a satisfactory display of safe, systematic, smooth driving so it is important that you work to eliminate any faults and develop a good understanding of your vehicle. Ultimately the safer, more systematic and smoother a driver you are will determine the grade you achieve on the day.

Without a shadow of a doubt converting thoughts and actions into words whilst driving, giving a running commentary helps to reduce the reaction time of the driver. Research shows that the average driver will react to an emergency situation in about 0.7 seconds or two-thirds of a second which, at 30mph means that the vehicle will have travelled 30 feet *before* they even start to lift their foot off the accelerator pedal, never mind apply any actual braking!

It follows then that the sooner a driver can react (thinking distance) the quicker they can apply the brakes (braking distance) and stop as their thinking distance + their braking distance = their overall stopping distance.

Most modern vehicles are fitted with very efficient braking systems, some better than others, however responsible drivers do not rely solely upon the effectiveness of their brakes to stop in time.

Concentration and alertness are key aspects of good driving which are strongly influenced by our general health, medication, fatigue and emotional state. Even before you get in a vehicle, you should always assess whether you are fit to drive. A useful acronym to help you remember this is **I AM SAFE:** Roadcraft page 274

Infection:	Are you suffering from infection or an illness which affects ability to concentrate?
Attitude:	Are you focused and comfortable about making this journey?
Medication:	Are you taking medication that makes you drowsy or unable to concentrate?
Sleep:	Have you had sufficient sleep and are not feeling tired?
Alcohol:	Are you under the influence of alcohol or drugs?
Food:	Have you had sufficient food and water and are not dehydrated?
Emotions:	Are you feeling angry, sad or depressed?

Pre-drive and roadworthiness weekly[2] safety checks

Pre-drive safety checks ensure that your vehicle is fit for the journey ahead.

Begin with a walk around the vehicle visually checking for defects and once inside methodically check the systems and controls. This useful acronym will help you remember: **POWDER checklist:** Roadcraft (p276).

Petrol / Charge	Check for sufficiency for the journey. Plan refuelling/Charging stops on long journey.
Oil	Which will also include hydraulic fluid levels? Check when cold and on a level surface.
Water	Coolant level and washer systems (check on a level surface)
Damage	Stone chips and other damage could affect safety and operating systems. If in doubt - check it out.
Electrics	Lamps and lens covers.
Rubber	Check tyres pressure, tread and for damage also check wheels for damage

[2] or sooner as deemed fit such as before a long journey

INTRODUCING COMMENTARY

Progressive Drive including Starting Commentary & Résumé.
The reason for giving a commentary as we drive is that it increases our awareness and concentration level allowing us to anticipate and plan our drive more effectively thereby using our skills to avoid danger. But it also gives us that one essential ingredient to safe driving – time to react. This allows us to react more quicker to sudden events so that if need be we are able to stop safely on our own side of the road within the distance we can see to be clear. This basic rule of driving is applicable at all times and in all condition.

As a learning tool, commentary also lets an observer know what we are seeing, how far we are seeing it, and importantly, what we are going to do about it.

During tuition you will be encouraged by your tutor to commentate; In this course, the Police Commentary is provided but candidates may prefer to use a less formal or conversational style of Commentary. Although these styles vary, they should contain similar information.
Examples of Commentary.

https://www.youtube.com/watch?v=y5h6-69FZSA&t=42s Bob Morton 56 min

https://www.youtube.com/watch?v=eaootQjPpGc&t=935s Reg Local 21 min

https://www.youtube.com/watch?v=rM_qc4mRhT4 1st Drive 35 min

What now follows is derived from police-training sources and has been included to help those drivers who choose to commentate to become familiar with the terminology however, even those who choose not to commentate will find the information beneficial.

After inspecting the vehicle and prior to switching ON the engine, Roadcraft lists two necessary pre-drive tests 'Inside the vehicle checklist' (p277) and following this (p278) covers the 'Stationary Test'. Together these form the 'Starting Drill'.

The Starting Drill

Once behind the wheel, but before starting the vehicle, carry out the pre-drive cockpit check or 'Starting Drill'.

A Starting Drill ensures that the driver is seated in the best possible position that affords good access to all foot and hand controls is comfortable and provides a good uninterrupted view of the road ahead, to the side, and to the rear.

It also ensures that the seatbelt and any auxiliary equipment such as lights, wipers etc., which may be needed at the start of a drive, are put on *before* the vehicle moves off. It also ensures that the safety and security of the vehicle, its passenger/s and/or load has been considered so that nothing has been left to mere chance and that both driver and vehicle are as prepared for the journey ahead as they can be.

A full Starting Drill is only normally required the first time that the vehicle is driven by a driver that day, thereafter an abridged version may be carried out each time the driver re-enters the vehicle throughout the working day.

You may if you so wish use the pre-drive checks that are contained in *Roadcraft* p.277. Either way a Starting Drill will, on any RoSPA test set the scene for the rest of the drive and will be appreciated and rewarded positively by your examiner.

NB. For the purposes of the advanced test please assume that the test is the first time the vehicle has been driven that day even although you may well have driven to meet your examiner, therefore a full Starting Drill is always advisable.

Starting Drill Method

- VISUAL EXAMINATION: walk around the vehicle and visually check the condition of tyres, bodywork, lenses and glass areas and windscreen wipers. Enter the vehicle. If the car requires the key to be inserted, do so.
- CONFIRM THE PARKING BRAKE IS ACTIVE: Most modern vehicles with electronic parking brakes have a small switch or button labelled "P" or "Parking Brake" near the gear selector or centre console Some cars with electronic parking brakes have a visual indicator on the dashboard that shows whether the parking brake is engaged or not. Look for a warning light that resembles a "P" or "BRAKE" symbol, and ensure it is illuminated.
- SECURITY OF DOOR/S: with your left hand locate the door handle (not the lock) and pull it sharply towards you – now push away. Invite passenger/s to check their door.
- SEATING POSITION: place your hands in the 'standard' position on the steering wheel i.e. ten-to-two or quarter-to-three; now slide them up to twelve o'clock, fists together, now slide them down to the six o'clock position and return to the 'standard' position. At the same time place your left foot on the floor between the bell-housing and footbrake pedal as this is the furthest your foot travels during any footbrake pedal operation.
- Ensure that the head restraint [3] is correctly positioned.
- START ENGINE: depress the footbrake. With the footbrake still depressed press the START/STOP button, then, slowly release the footbrake.
- INSTRUMENT PANEL: check the instrument panel top to bottom, left to right that there is sufficient fuel/charge, the water temperature is normal and that all warning lights are extinguished (except for hand/parking brake and seatbelt).
- MINOR AUXILIARIES: select heating and ventilation, heated screen/s and side lights if required (tip: keep fan on position 1 with a cool blow directed to the screen).
- CHECK MIRRORS: using forefinger and thumb of each hand locate the four corners of the internal rear-view mirror. Line up the top edge of the mirror with the top of the rear windscreen. Ensure that both external rear-view mirrors give a good view along both sides of the vehicle and to the rear.
- STATIC BRAKE TEST: depress the foot brake firmly for three to four seconds and release.
- WINDOWS: ensure that all the windows are closed.
- MAJOR AUXILIARIES: select windscreen wash & wipe/dipped headlights/fog lights if required.
- SEAT BELT: locate, fit and secure seat belt. Ensure passenger/s do likewise pointing out to them the method of release.
- MOVING AWAY: Check all three mirrors and signal if required, select DRIVE (D), check over both shoulders and if safe, lightly press the accelerator to move smoothly away.

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[3] the top of the head restraint should be as high as the top of your head and no lower than 2½ inches below the top of your head and no further than 2½ inches from the back of the head.

Starting Drill Commentary

- Visual examination of exterior then enter vehicle and insert ignition key.
- "*Checking my electronic parking brake is active.*
- *Checking my door for security* (ask passenger/s to check their door*).*
- *Checking my seat for accessibility to hand & foot controls.*
- *Now depressing my footbrake and with the footbrake still depressed I will START the car. Now, slowly releasing the footbrake.*
- *Checking instrument panel; I have sufficient fuel/charge for the journey the water temperature is normal and there is only one warning light illuminated which is the parking brake & seatbelt warning lights. I anticipate this will be extinguished after fitting my seatbelt and on release of the hand/parking brake.*
- *Selecting minor auxiliaries. (*Tip: see above*)*
- *Checking all three mirrors ensuring I have a good view to the rear and along both sides of my vehicle.*
- *Now carrying out a static brake test.*
- *Ensuring that all windows are closed.*
- *Selecting any major auxiliaries.*
- *Now locating, fitting and securing my seat belt*." (Invite passenger/s to do likewise explaining the method of release).

Moving Off Method

- Check all three rear-view mirrors.
- Signal if required.
- If safe, move the selector to DRIVE (D).
- Shoulder-checks (depending on which side of the road you're moving away from or where the greatest zone of danger exists determines if it is right then left or vice versa
- As head and eyes return to the front, move your foot off the footbrake, press gently on the accelerator moving away smoothly.

Moving Off Commentary

"I am now ready to move off, checking all three mirrors it's safe to select DRIVE, giving a right/left turn signal (if required); deep left/right shoulder check locating the parking brake switch *(many cars automatically disengage the parking brake),* deep right/left shoulder check and as my head and eyes return to the front synchronising release of the parking/foot brake and gently depressing the accelerator and moving away smoothly.

As anticipated the parking brake warning light has gone out, if any other warning light should come on during my journey I will stop safely and investigate the cause."

Moving Brake Test Method

A moving brake test should be carried out as soon as it is safe and practicable after moving away. Always consider the safety and convenience of other road users before you do a moving test. (*Many electric vehicles have different driving modes, and some allow you to adjust the level of regenerative braking. Set the vehicle to a mode that minimizes or disables regenerative braking during the test. This can usually be achieved by selecting a more aggressive driving mode or turning off the regenerative braking system if the car allows it.)*

- Check the road is clear behind you and accelerate briskly to reach 25-30 mph
- Gripping the wheel lightly, brake gradually and progressively, not harshly.
- Feel for anything unusual (e.g. The car pulling to one side)
- Release the brake pedal before you reach a standstill to check the brakes release fully and are not binding.

Moving Brake Test Commentary

> "My first consideration is to carry out a moving brake test. This is done by bringing the speed of the vehicle to between 25 & 30 mph, I will then brake to reduce the speed and release the brakes just before the vehicle comes to a halt.
>
> It's clear to the front, a mirror check reveals it's clear to the rear, stand by for a moving brake test. Braking … NOW! I can report that the brakes are pulling firmly and evenly all four road wheels and it's safe to continue my journey."
>
> **Or**
>
> "It is unsafe/inappropriate to carry out the test due to nature of the road/parked vehicles/opposing vehicles/following vehicle/pedestrians and I am delaying the test until the first appropriate hazard or on the open road not in excess of 50 mph.

Important: The brake test should be firm enough to test the brakes but not so as to test seatbelts. It should be carried out on a flat, level road surface that is in a good state of repair and away from any parked cars, pedestrians, junctions or when there is opposing or following traffic. You should not bring the vehicle to a halt, but ensure you release the footbrake prior to stopping fully to check the brakes are not binding. Always pause after saying "stand by for a moving brake test" to give any passenger/s time to brace themselves.

If the test is delayed it may be done by braking more firmly on the approach to the first hazard, but only if there is no following traffic. It should be done as soon into the journey as is safe or in any case at a speed not in excess of 50mph.

If the driving mode was changed to reduce/remove regenerative braking or regenerative braking was disabled/reduced, reset these as appropriate for your journey after completing the moving brake test.

Stopping Drill

- Select a safe place to pull in and stop.
- Check mirrors and signal (if required).
- Brake smoothly to a halt, apply the parking brake and cancel signal.
    - (If facing downhill ensure wheels are slightly turned inward, if
    - uphill turned out).
- Move selector lever into PARK.
- Switch off all major and/or minor auxiliaries.
- Press the START/STOP button.. .
- Check all three mirrors.
- If safe, release and stow away seat belt/s.
- Carry out appropriate shoulder checks using the Dutch Reach, if you are able, (use your left hand to open a door on your right-hand side. This will make you turn your head to look over your shoulder. You are then more likely to avoid causing injury to cyclists or motorcyclists passing you on the road, or to people on the pavement) to open the door.
- Leave vehicle if safe.

Stopping Drill Commentary

“Mirror, nearside mirror left-turn signal (if required), selecting a safe place to pull in and stop
Braking gently to a halt and reaffirming footbrake to prevent nose-dip
Now applying the parking brake
Moving selector lever into PARK, feet clear of the pedals
Switching off all major and/or minor auxiliaries
Press the START/STOP button.
Checking all three mirrors
It is now safe to release and stow away seat belts safely
Deep left shoulder check – now using the Dutch Reach (opening the door with my left hand) it is safe for me to leave the vehicle however; I would advise my passenger/s to also use the Dutch Reach and check over their respective shoulders before leaving the vehicle.”

Parking/Stopping Advice

- Always park safely, lawfully and with due consideration for others.
- Ensure parking brake is fully applied.
- Park close to, and parallel with the kerb.
- Leave room to get back out when parking behind another vehicle. do not stop too close to a vehicle displaying a Blue Badge: remember, the occupant may need more room to get in or out
- Reverse into a parking bay whenever possible and centralise vehicle.
- When parking downhill apply parking brake with front wheels turned slightly to left.
- When parking uphill apply parking brake with front wheels turned slightly to the right.
- When using an electric vehicle charge point, you should park close to the charge point and avoid creating a trip hazard for pedestrians from trailing cables. Display a

warning sign if you can. After using the charge point, you should return charging cables and connectors neatly to minimise the danger to pedestrians and avoid creating an obstacle for other road users.

- When stopping on a motorway hard shoulder, where available, or on other fast main roads due to a breakdown or other emergency, switch on hazard warning lights get as close to the nearside as possible and turn front wheels to the left.

Résumé

As a lead into full commentary it is suggested that the driver begin with an introduction or resume. Its purpose is to set the scene for what is about to occur during the drive and also settles the driver down especially during a test. What follows is taught to all police drivers on their Advanced Driving Course however; it is not taught to drivers on the Standard Course. Some RoSPA advanced drivers have adopted it also, but it is purely optional.

"*Today as all days, I will drive my car to the system of car control, which is a way of approaching and negotiating hazards that is methodical, safe and leaves nothing to chance.*
To do this will require me to apply concentration and alertness in order to drive my car safely, smoothly progressively and well.
I will formulate my driving plan on three things; what I can see, what I cannot see and what I might reasonably expect to occur.
By driving my car to the system of car control I will at all times observe, plan and anticipate to ensure maximum vehicle stability in response to all road and traffic conditions.
As it is today, I am driving a…motor car with a compliment of… passengers on board.
I am presently driving in (town or area) travelling on a two-way undivided/single track/dual-carriageway, the surface of which is wet/dry, in a good/poor state of repair and affords good/reasonable/poor tyre adhesion in relation to braking, steering and acceleration.
Looking outwards I see that it is sunny/overcast/raining/snowing, and I expect/do not expect the weather conditions to continue during my journey.

Looking to the front I have preceding/no proceeding vehicle and opposing/no opposing vehicles and a mirror check reveals I have/have no following vehicles. I will check my mirrors frequently so that I am aware of the traffic situation all round.
In the far distance I have a range of hills/no appreciable far distance. In the middle distance, I have areas of agricultural land from the 9 through to 3 o'clock positions/a built up area. In the nearer foreground my road is coming back from..."

Police Drivers on the Standard Driving Course are not taught to recite all of the above résumé but begin from, '*As it is today I am driving a*…' as way of an
'Introduction to Commentary'.

An Introduction to Commentary is not a prerequisite for drivers on a RoSPA test, but is to be encouraged and will be appreciated by your tutor and examiner positively.

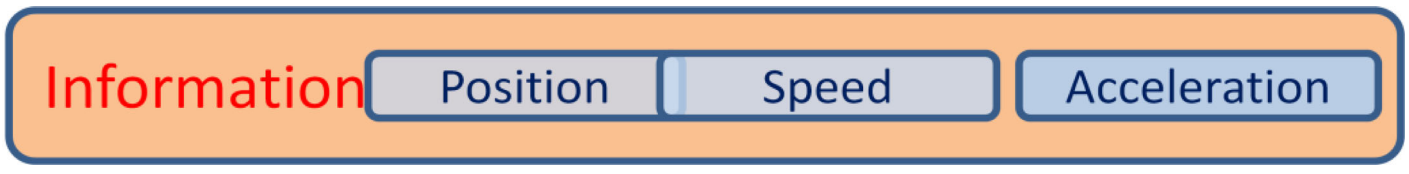
The driver thereafter converts their thoughts and actions into words, always reading the road back towards the vehicle, locating those areas of danger, actual or potential and more importantly, determining what they are going to do about them?

Initially, learning to commentate may for some be embarrassing. You may also find that other areas of your driving suffer e.g. the car slows down whenever you speak, and it may sound like a shopping list i.e. bus stop – pedestrian – car – junction, but with practice any

embarrassment will be overcome, you're able to maintain speed and observations can be woven together to form a narrative with the most likely outcome or event.

As with learning anything new, the more times you try it the easier it will seem and the better you will become.

THE SYSTEM OF CAR CONTROL Based on Roadcraft Chaper 2



What is the system?

The system of car control is defined as a way of approaching and negotiating hazards that is methodical, safe and leaves nothing to chance. It involves careful observations, early anticipation and planning, and a systematic use of the controls to maintain your vehicle's stability in all situations. (Roadcraft, pp 25/29)

The system of car control when driving an electric vehicle (EV), Hybrid and an internal combustion engine (ICE) with an automatic gearbox is divided in to four phases:

1. Information (Take, Use and Give)
2. Position
3. Speed (allowing time for an automatic to engage the correct gear)
4. Acceleration

At the heart of the system is the centrally flexible element – You the driver. Just as the system is applied flexibly, so too is the way it is spoken during commentary as no two hazards are ever the same, however, it is very important to reiterate that when a system is implemented that the phases are applied 'in sequence' and that during commentary phases 2, 3, and 4 when applied, are always mentioned by name.

What is a hazard? – Roadcraft page 25 & page 47
A hazard is anything that is an actual or potential danger. There are three main types of hazard:

1. Physical features like junctions, roundabouts, corners and bends; hill crests and includes any type of pedestrian crossing, roadworks and temporary traffic lights.
2. Risks arising from the position or movement of other road users including cyclists, pedestrians and horse riders.
3. Problems that can arise from condition of road surfaces and weather for example, reinstatement, manhole covers, surface water, micro climates, rain, snow and fog.

To negotiate hazards safely, good positioning is vital to obtain the best possible view of what is happening around you. It also helps other road users know what you intend to do and vices versa (planning).

To effect safe driving plans you must consider three factors; what you can see, what you cannot and what can reasonably be expected to develop (anticipation).

The hazards that you encounter should be graded in order of importance. Those which are of the greatest risk are dealt with first. Always try to have a contingency plan whenever possible i.e. escape route (grading).

Overall, the core principles of the system remain the same for EVs; Hybrids and Automatic as for ICE vehicles. With one obvious exception; the GEAR phase can be totally devolved from the driver's control. Meanwhile the SPEED phase becomes even more important. As in the manual vehicle system diagram, note the space before the ACCELERATION phase.

Driving using the SYSTEM in EV’s Hybrid and automatic vehicles, this space indicates that the SPEED phase must take every factor into account prior to the decision to go or stop for the hazard is made.
By considering these additional factors as part of your driving plan, you can maximize the benefits of driving an automatic, EV or Hybrid while maintaining safety when approaching hazards. Modern implementations offer exciting advancements in automotive technology, and responsible driving practices can ensure a smooth and enjoyable driving experience.

INFORMATION, OBSERVATION & ANTICIPATION. Roadcraft chapter 3

As Albert Einstein once said, “If you can’t explain it simply, you don’t understand it well enough.” The ability to judge a situation, grade risks and anticipate how things are likely to unfold is essential to safe driving, especially at high speeds (Roadcraft p43)

Improving information processing by –

- Be personally aware of how tiredness and distractions will affect your driving skills.
- Regularly practicing good driving techniques and manoeuvres so that you can do them accurately and efficiently.
- Sharpen your observation and perception and develop your situational awareness.
- Use the System of Car Control whenever you drive so that you make decisions methodically and quickly.
- Learn to hold onto important pieces of information until you need them by repeating them, relating them to things you know well, or using other memory techniques. (Roadcraft p46)
- See and be seen. Especially in low light and murky weather conditions.
- When driving an EV or Hybrid in electric mode, be more aware of other road users who may not be aware of you.
- Before you drive, make sure your windows, mirrors, and the lenses of your lights and indicators are clean and auxiliaries are functioning and topped-up.
- Use full/dipped headlights correctly and efficiently. Don’t dazzle other roadusers including pedestrians and cyclists. Switch to sidelights only if stopped or stationary and when you are queuing behind other vehicles.
- Anticipate hazards ahead from observing other’s lights and reflective studs and markings. Observe understand and react to all road signs.
- Planning – anticipate hazards, prioritise, decide what to do Roadcraft (p48 – 52)
- Drive for the road and weather conditions. ‘Is my journey necessary?’ Roadcraft (p74)
- Be aware of micro climates and changes in the road surface.

ANTICIPATING HAZARDS IN THE DRIVING ENVIRONMENT.
Roadcraft chapter 4

OBSERVATION LINKS

Almost everything seen on a journey can be linked with what may reasonably be expected to occur. By observing and linking with what we they see, advanced drivers formulate a proactive way of driving rather than a reactive one. This defensive attitude is born out of experience by what has occurred in the past is liable to occur again?

The following extensive, though not exhaustive list of observation links is designed to show the nature of association and the logical deductions that can be made in the hope that we will always be one step ahead and reduce our risk of an accident or at the very least, an unpleasant experience.

These are examples of observations and their associated links, which advanced drivers look for, converting what they see, hear or even smell into what they anticipate may occur, as drivers who anticipate will react by as much as three times more quickly thus using their skills to avoid areas of danger or conflict rather than simply to get out of them!

YOU SEE	*YOU ANTICIPATE*
Empty bus stop on your nearside	Bus ahead having just picked-up passengers?
Bus ahead of you	May stop at next bus stop? (Look for people inside standing up).
Bus stopped at a bus stop on offside	Pedestrian/s may step/run out from behind bus?
Any vehicle immediately in front of you	May stop or start to turn off at next junction and not complete the manoeuvre/pull in?
Petrol tanker ahead	May deliver to next petrol station?
Petrol station	Movement of vehicles in and out/ contaminated road surface?
Taxi ahead	May do U-turn to pick up pedestrian?
Pedal cyclist	May wobble/Queuing traffic/overtaking vehicles?
Fire engine on emergency call	Expect another appliance/water spillage?
Vehicle/s turning at junction	May stop or not complete the manoeuvre/ Others road-users may emerge?
Row of parked vehicles	Doors may open/vehicle pulls out/ pedestrian steps out between (small children)?
Vehicle stopped in front of you at junction	May be giving way to a cyclist or pedestrians/ May have broken-down?
Goods vehicle ahead	Local drop-off?
Circle of lamp posts	Possible roundabout?
Single lamp post on otherwise unlit road	Possible junction?
Telegraph wire over the road	Possible farm road-end?
Mud/other deposits on the road	Slow-moving vehicle ahead/ animals on the road?

Learner driver	May roll back on hill/stop suddenly?
Built-up area ahead	Step down in speed (usually at first lamppost or building)?
Railway line running alongside the road	Bridge over or under the road?
Roadworks	Speed limit/contamination of road surface/ workmen on the road?
Freshly cut grass/hedge at roadside	Slow vehicle/s ahead?
Jogger on road	Possible running club. Others ahead?
Sports cyclist on road	Possible cycling club. Others ahead?
Overtaken by high-speed motorcyclist	Expect another to follow?
Hospital	Emergency vehicles/vulnerable pedestrians crossing the road?
Slip-road off motorway	Slip-road onto motorway ahead, vehicles joining/changing lane?
Overtaking/overtaken by large vehicle	Buffeted by wind?
Oncoming large goods vehicle on a wet road	Road spray onto windscreen?
Oncoming large goods vehicle	Hidden vehicle (lurker) may emerge?
High winds	Debris i.e. branches on the road?
Area of diagonal stripes in the centre of the road	May be overtaken?
Turning at junctions	Pedestrians crossing/Obscured cyclist or motorcycle?
Gap between two leading vehicles shortens	One may be about to overtake/slowing for other road-users?
Cemetery	Slow moving vehicles in convoy?
Bin bags or wheelie-bins at side of road	Refuse collection vehicle and attendants?
Daytime in Winter	Micro-climates in shadows?
Sunny day in Winter/Spring	Low sun causing glare?
Rain after a long hot spell	Slippery road?
Autumn leaves	Slippery road?
Holes in roadside fencing	Animals on road?
Accompanied horses or ponies warning sign	Horses and riders on the road/pedestrians accompanying
A pedestrian walking on the road.	May be others ahead/parked vehicle?
Tourist route	Caravans/mobile homes?
Television or radio masts on hill	Service road?
Blue flashing lights	Accident ahead?
Amber flashing lights	Roadworks/breakdown vehicle?
Child/children running across the road	Expect more to follow?
Ball bouncing onto road in front of you	Followed by child/children?

ACCELERATION, USING GEARS, BRAKING & STEERING Roadcraft Chapter 5

The smoothness of a drive is greatly improved by the early anticipation of the need to slow down or stop and by slowing gently and progressively

Acceleration Sense Roadcraft (p97)
The ability to vary vehicle speed in response to changing road and traffic conditions by the accurate use of the accelerator. The essence of acceleration sense is good observation, coupled with sound judgement of speed and distance.

Associated with acceleration sense in relation to making progress in clear country roads, the Half-distance rule of thumb which has a variation known as the Thirds rule. Both are intended to be used for deciding when to stop accelerating and if and when to start decelerating when driving on clear roads between two hazards.

The Half-distance rule means after steering out of one hazard, and there is a clear distance to the next hazard, firmly accelerate half-way or up to the speed limit, whichever comes first. Use the remaining distance to analyse and smoothly prepare for the next hazard. If the road ascends or descends the rule is modified to accelerate 3/4 distance or 1/4 distance accordingly

Using the Thirds rule of thumb firmly accelerate for one third of the distance(or up to the speed limit, whichever comes first), maintain speed for the next third, then slow down during the remaining third.

If you accelerate for half the distance, you get more progress at the expense of economy

Braking Sense
'Is the ability to appreciate a situation correctly, and to apply the brakes in a timely and gradual manner (other than in an emergency) to stop or reduce the speed of the vehicle when this cannot be achieved by deceleration in the time and distance available.'
Rear observations must be made prior to any change in speed or direction
As you lift off the accelerator pedal in an EV and some Hybrids, it starts slowing down more aggressively than an ICE vehicle due to regenerative braking. If your vehicle does not give a foot brake warning light when decelerating without using the footbrake, be aware that following drivers may take time to respond.

Pull-Push Steering Roadcraft (p120)
When you steer do you start with a push rather than a pull? If in the past you've tended to start with a push, practice pulling first. Notice how it contributes to the smoothness and control of your steering.

Stopping distances
Overall stopping distance consists of thinking distance and braking distance.

Thinking distance is always the same in feet as it is in mph therefore the thinking distance at 30 mph is 30 feet; 40 mph is 40 feet and so on.
This is calculated by the fact that the reaction time of the average driver is 0.7sec or ⅔ of a second. At 30mph a motor vehicle covers 45 ft/sc therefore ⅔ of 45 = 30 and so the 'average' driver will have travelled 30 feet *before* they react to a sudden event. To this

distance we then add braking distance, which at 30mph is 45 feet therefore; at 30mph a vehicle driven by the average driver will travel 75 feet or 5 vehicle-lengths before stopping.

Braking distance can be calculated by halving the first figure of the speed, which at 30mph is 3, 40mph is 4 and so on and multiplying the answer by the original speed. Again the answer is in feet - i.e. speed is 30mph half of 3 = 1½. 1½ x 30 (original speed) = 45 (feet).

To calculate overall stopping distance add thinking and braking distances together.

Overall Stopping Distances:
20 mph = 40 feet.
This is calculated by adding 20 feet thinking distance + 20 feet braking distance
30 mph = 75 feet.
This is calculated by adding 30 feet thinking distance + 45 feet braking distance
40 mph = 120 feet.
This is calculated by adding 40 feet thinking distance + 80 feet braking distance
50 mph = 175 feet.
This is calculated by adding 50 feet thinking distance + 125 feet braking distance
60 mph = 240 feet.
This is calculated by adding 60 feet thinking distance + 180 feet braking distance
70 mph = 315 feet.
This is calculated by adding 70 feet thinking distance + 245 feet braking distance

Remember that when you double your speed you quadruple your braking distance

Do stopping distances need to be updated?

The Highway Code has used the same stopping distances for decades, even though cars and their brakes are more advanced now.

"Some people think we should reduce stopping distances to account for the improvements. Others say we should increase them because drivers face more distractions these days.

Either way, these guidelines have proved effective so far. And there's no sign of them changing anytime soon." [Source: The AA, updated 23rd January 2020]

Automatic transmission, EV and Hybrids Roadcraft (p105-109)

- Modern vehicle automatic gearboxes have evolved significantly in recent years. The trend toward electrification and hybridization has also brought about innovative transmission technologies to accommodate electric motors and optimize power delivery in hybrid vehicles.
- Traditional automatic transmissions typically had 4 to 6 gears, but modern ones have shifted to more gears, such as 7, 8, 9, or even 10-speed transmissions. More gears allow for better engine performance and fuel efficiency.
- Modern automatic gearboxes are electronically controlled, allowing for precise and seamless gear shifts. Electronic control units (ECUs) monitor various parameters such as vehicle speed, engine load, throttle position, and driver input to determine the optimal gear shift points.

- Even in traditional automatic transmissions, you may find paddle shifters mounted on the steering wheel. These allow the driver to manually control gear changes in certain situations, providing a more engaging driving experience.
- In advanced models, automatic gearboxes can work in tandem with driver-assistance systems, such as adaptive cruise control, lane-keeping assist, and collision avoidance systems, to optimize gear shifts for a smoother driving experience.
- Many modern automatic transmissions use adaptive shift algorithms that learn the driver's behaviour and adjust the gear shifts accordingly. They can adapt to different driving styles and road conditions to optimize performance and efficiency. (In these circumstances the vehicle may take time to LEARN your new driving style.)

However, the unique features of EV's and Hybrids in electric mode which requires more consideration.

1. **Instant Torque:** EV's typically provide instant torque, meaning they can accelerate rapidly. When approaching hazards, be cautious with your accelerator inputs to avoid sudden acceleration, which could lead to losing control of the vehicle.
2. **Regenerative Braking:** Most EV's and Hybrids are equipped with regenerative braking systems that convert the vehicle's kinetic energy into electrical energy during deceleration. As you lift off the accelerator pedal in an EV, it starts slowing down more aggressively than an ICE vehicle due to regenerative braking. If your vehicle does not give a foot brake warning light when decelerating without using the footbrake, be aware that following drivers may take time to respond.
3. **One-Pedal Driving:** Some EVs offer one-pedal driving modes, where you can control both acceleration and deceleration using just the accelerator pedal. When approaching a hazard, you can lift off the accelerator to slow down or even bring the vehicle to a complete stop. One-pedal driving can be especially beneficial in traffic or urban areas with frequent stops. As before, be more aware of other road users and following drivers taking time to respond.

MANOEUVRING AT SLOW SPEEDS. Roadcraft Chapter 6

The System of Car Control must continue to be employed throughout, which includes manoeuvring at slow speeds and parking. The first learning outcome in this chapter is – Explain how to use the system of car control to perform low-speed manoeuvres such as parking or turning in a confined space.

Observations are vital for safety. Turning your head to look out the rear window, while scanning ahead and to both sides is essential for anticipating any approaching moving hazard. Parking aids such as cameras and sensors are becoming excellent tools but do not over-rely on them. All round visual observation will provide anticipation which electronic aids may not.

Planning the need to slow manoeuvre should cover every stage between the start and finish. *When you're faced with an awkward manoeuvre, first consider whether it's absolutely necessary. Is there an alternative route that you could use?* (Roadcraft p128)
Practice with commentary as you slow manoeuvre when reverse parking or turning in a narrow space.

When it is necessary to reverse-park in a space between two other vehicles, use the system to inform others your intention. Drive slowly and signal, if necessary, you intend to take the space. Pass the space and after looking around, steer away from the space so you can view your route is clear into the space out your rear window and door mirrors. Cancel your signal and immediately select REVERSE (R). Continue to look all around, reverse slowly into the centre of the space, steering as necessary.

If you require using a guide to aid your manoeuvre, ensure you can see and hear each other throughout the manoeuvre. Open the vehicle window to aid this contact.

REMEMBER - EV's and Hybrids in electric mode are quieter than ICE vehicles, making them less noticeable to other road users, pedestrians and cyclists. Exercise extra caution when slow manoeuvring and be prepared to give-way when necessary

MAINTAINING VEHICLE STABILITY. Roadcraft Chapter 7

Modern technology (when present) which is developed to assist control of your vehicle -

- Anti-Lock Braking
- Traction control systems
- Electronic stability programmes
- Adaptive Cruise Control
- Forward Collision Warning
- Automatic Emergency Braking
- Automatic Emergency Steering
- Lane Departure Warning
- Lane Keep Assist

What do all these innovations have in common? **The quality & amount of Tyre Grip**.
The contact patch of a car tyre is approximately the size of your hand. The pattern positive reduces the rubber/road contact by 30%. Block deformation due to high speed cornering can further reduce contact by as much as 60%. Road macro roughness can reduce as much as 5% and road micro roughness by 4%. Tyre manufacturers recommend replacing summer tyres at a minimum tread depth of 3mm & winter tyres at 4mm.

The main causes of skidding are (Roadcraft p 144)

- Driving too fast for the circumstances
- Harsh acceleration
- Excessive or sudden braking
- Coarse steering

It will be no surprise therefore that the common element in all of these is the driver.
Many single vehicle accidents occur at or after a bend. Over-responding too late can often result in serious loss of vehicle stability and consequent loss of control. Active safety systems may not help if tyre grip is affected by weather conditions or poorly maintained tyres.

Never rely on safety devices. Always drive in such a way that they are not necessary.
Correctly assessing the severity of the bend is essential for safety.

- Make sure that your vehicle is in the correct position on the approach
- Travel at the correct speed for the corner or bend
- Use the accelerator to maintain a constant speed through the bend
- Be able to stop safely within the distance you can see to be clear on your own side of the road.
- On an unfamiliar bend use observational links & be prepared if necessary to adjust your steering as you travel around the bend

DRIVER'S SIGNALS. Roadcraft Chapter 8

In chapter 2 of Roadcraft we learned the acronym TUG, meaning, Take-Use-Give. The 'I' in IPSA persists throughout the phases of the System of Car Control. Taking in the information visually as well as sounds, sometimes smell and feel, and using this to plan our drive, we can ensure that other road users know where we are, and crucially, what we intend to do. We give information by signalling our intention and in chapter 8 Roadcraft advises us to use the most effective signal for the job.(Roadcraft p.154-159)

Roadcraft states that you should- *Give a signal whenever it would benefit other road users. You may also need to give a signal to override lane-changing technology*. (p152) You may need to warn other road users (audibly or visually) when driving electric due to lack of engine noise.

The first two rules (103 – 104) in the Highway Code, *General rules, techniques and advice for all drivers and riders* are about giving and taking signals. In the same section, rules 110 and 111 covers using headlights as a signal; rule 112 covers the use of the horn as a signal and 116 covers the use of hazard warning lights. Page 121 in the Highway Code illustrates the use of hand signals for the benefit of other road users.

Roadcraft says the most effective signal might also include the position and speed of your vehicle, brake lights or a combination of signals on occasions where necessary. EG. Use of the horn (H/Code Rule 112) and a courtesy signal Brake lights and a Slowing down arm signal.

Interpretation of signals given by other users (pg 153) and responding to other peoples signals (pg 154 -159) should also be considered in each case. *(If someone beckons you to move forward, always check yourself whether it is safe to do so).*Roadcraft p.159

Full System Commentary & ROAD POSITIONING. Roadcraft Chapter 9

Advanced drivers refer to five basic road positions they occupy on a road, they are:

- **Nearside** which is approximately 12-18 inches out from the kerb, kerb-shy line or verge or drain covers etc. Adopt this position only when it is safe to do so and on roads where there is sufficient width to gain an advantage.
- **Offside** which is approximately 12-18 inches in from the centre or imaginary centre line
- **Central** which is equidistant from the nearside and offside
- **Opposing carriageway** which is across the centre, or imaginary centre line
- **Safety position** may be described as the one that gives the best view, but with careful regard for safety.
- Any of these positions should be sacrificed for safety Roadcraft (p163)

Following Position

In good, dry conditions at speeds 30mph and above maintain a gap of at *least* one yard/metre per mph of your speed between you and the vehicle directly in front i.e.

30mph = a following distance of at *least* 30 yards/metres
70mph = a following distance of at *least* 70 yards/metres

One easy way to calculate these distances is to use the 'two-second' rule which can be done while travelling behind another vehicle. Look for its rear wheels to pass over a fixed point on the road.
This can either be a change in road surface colour or composition; a reinstatement caused by repair; a manhole cover, a road marking or reflecting road stud or even a shadow cast onto the road surface by an overhead streetlamp, road sign or bridge, and say to yourself, "*Only a fool - breaks the two second rule*." The idea is to finish saying it before your vehicle reaches the same point. At speeds *less* than 30mph allow a gap of at least one foot per mph.

Note: all these distances must be at least double in the wet and at least quadruple or even more in snow/ice.

Full System Commentary approaching & negotiating hazards

The phraseology used in each of the following examples, the mirrors checked are in brackets and is used only as an illustration and will not always be the case every time. It should also be noted that these are the *minimum* number of mirrors checked. A signal can be given at any point in the system, but if required at phase 1, it should be given after a mirror-check and before any change in road position or speed: Mirror – Signal – Manoeuvre. Where your position has an option, options are separated by an '/' and the appropriate safe position for each situation should be adopted.

FOR THE PURPOSE OF ILLUSTRATION ALL ROADS ARE TWO-WAY UNDIVIDED CARRIAGEWAYS i.e. SINGLE CARRIAGEWAYS

Left-turn from main road signal required

""Take, Use & Giving information, (Driver/nearside mirror signalling left) my position will be to the nearside/ central, reducing speed initially by deceleration and now by the application of the brake. Looking-in, my ne road is clear, my speed is correct, Taking & Using information (Driver/nearside mirror) applying a light degree of acceleration to leave the hazard safely."

Left-turn onto main road signal required at phase 1 - stopping
“Take, Use & Giving information, (Driver/nearside mirror signalling left) my position will be to the nearside / central, and reducing speed, initially by deceleration and now by the application of the brake bringing my vehicle to a halt. Looking-into my new road. Right-to-left and left-to-right. My road is clear. Taking & Using information (all three mirrors) and applying a light degree of acceleration to leave the hazard safely.”

Right-turn from main road signal required
“Take, Use & Giving information, (Driver/offside mirror signalling right) my position will be to the offside/central reducing speed by decelerating and now by the application of the brakes. Looking-in, my new road is clear, (off brake pedal), Taking & Using information (Driver/ offside mirror) applying a light degree of acceleration to leave the hazard safely.”

Right-turn onto main road signal required at phase 1 - stopping
“Take, Use & Giving information, (offside mirror, signalling right) my position will be to the offside/central, and reducing speed by decelerating and now by the application of the brake bringing my vehicle to a halt. Looking-in, my new road is clear, Taking & Using information (all three mirrors) applying a light degree of acceleration to leave the hazard safely.”

Crossroads

Straight ahead at crossroads (nearside position)
“Taking & Using information,(Driver/ nearside mirror) my position will be to the nearside, reducing speed by decelerating and now by the application of the brake bring my vehicle to a halt/stop. My road ahead is clear, Taking & Using information (all three mirrors) applying a light degree of acceleration to leave the hazard safely.”

Straight ahead at crossroads (offside position)
“Taking & Using information, (Driver/ offside mirror) my position will be to the offside, reducing speed by decelerating and now by the application of the brake. Looking ahead my road is clear; Take & Using information (Driver/nearside mirror) and applying a light degree of acceleration to leave the hazard safely.”

Roundabouts

Straight ahead at roundabout
“Taking & Using information, (Driver/ nearside mirror) my position will be to the nearside / central, reducing speed initially by deceleration and now by the application of the brake, scanning my exit while looking for my gap. I have a gap; Taking & Using information, (Driver/offside mirror) accelerating to the rim of the roundabout. Take Use & Giving information (Driver,/nearside mirror left-turn supplementary signal). Looking-in, my new road is still clear, and applying a light degree of acceleration to leave the hazard safely.
Taking & Using information (Driver/offside mirror my position is central, speedometer-check / firming on the acceleration away from the hazard.”

Left-turn at roundabout signal required at phase 1
“Take, Use & Giving information, (Driver/nearside mirror signalling left) my position will be to the nearside / central, reducing speed initially by deceleration and now by the application of the brake scanning my exit while looking for my gap. I have a gap; Looking-in my new road is still clear, Taking & Using information (Driver/nearside mirror) applying a light degree of acceleration to take me into and clear of the hazard. Taking & Using information, (Driver/offside mirror) my position is central, speedometer-check firming on the acceleration away from the hazard”

Right-turn at roundabout signal required at phase 1
“Take, Use & Giving information, (Driver/offside mirror signalling right) my position will be to the offside/central, reducing speed initially by deceleration and now by the application of the brake. Scanning my exit while looking for my gap. I have a gap, Taking & Using information (Driver/offside mirror) accelerating to the hub of the roundabout. Looking-in my new road is still clear, Take, Use & Giving information (Driver/nearside mirror supplementary left-turn signal shoulder-check if required) and applying a light degree of acceleration to leave the hazard safely. Taking & Using information, (Driver/offside mirror) my position is central, speedometer-check firming on the acceleration away from the hazard”

Straight ahead at roundabout nearside lane / lane one of a dual carriageway
“Taking & Using information, (Driver/nearside mirror) my position is the nearside lane / lane one, reducing speed initially by deceleration and now by the application of the brake. Scanning my exit while looking for my gap. I have a gap, my new road is still clear, Taking & Using information (Driver/offside mirror) and applying a light degree of acceleration to leave the hazard safely. Taking & Using information, (Driver/offside mirror) my position is the nearside lane / lane one, Speedometer check and firming on the acceleration away from the hazard”

Right-turn at roundabout offside lane / lane two of a dual carriageway signal required at phase 1
“Take, Use & Giving information (Driver/nearside mirror & signalling right) my position is the offside lane / lane two, reducing speed initially by deceleration and now by the application of the brake. Scanning my exit while looking for my gap. I have a gap, Taking & Using information (Driver/ nearside mirror) accelerating to the hub of the roundabout. Looking-in my new road is still clear. Take, Use and Giving information (Driver/nearside mirror [shoulder- check if required] & supplementary left-turn signal) and applying a light degree of acceleration to leave the hazard safely. Taking & Using information (Driver/offside mirror) my position is the offside lane / lane two, speedometer-check and firming on the acceleration away from the hazard”

Left-turn at roundabout nearside lane / lane one of a dual carriageway signal required at phase 1
“Take, Use & Giving information (Driver/nearside mirror & signalling left) my position is the nearside lane / lane one, reducing speed initially by deceleration and now by the application of the brake. Scanning my exit while looking for my gap. I have a gap. Looking-in my new road is still clear. Taking & Using information (Driver/nearside mirror) and applying a light degree of acceleration to take me into and clear of the roundabout. Taking & Using information (Driver/offside mirror) my position is central, speedometer-check and firming on the acceleration away from the hazard”

System for approaching pedestrian crossings

No pedestrian activity
“Taking & Using information, (Driver/near/offside mirror) my position is central/safety position scanning the crossing left to right – right to left the crossing is clear and it’s safe to proceed.”

Pedestrians at or near to crossing but lights remain green
“Taking & Using information, (Driver/near/offside mirror) my position is central/safety position, my speed is correct, Taking & Using information (all three mirrors) and acceleration from the hazard safely.”

Pedestrians at or near to crossing but lights are red or changing to red
“Taking & Using information, (Driver/near/offside mirror) my position is central/safety position, reducing speed bringing my vehicle to a halt at the stop line/behind the vehicle in front.
Lights are about to change/are changing. Taking & using information (all three mirrors) and accelerating from the hazard safely.”

Commentary for approaching parked vehicles etc.
“Taking & Using information, (Driver/offside mirro)r moving to a safety position to avoid the obstruction/s by early and gradual deviation, which eliminates the need for a signal;
Anticipating doors opening/vehicles moving out, and pedestrians, especially small children running from between the vehicles.”

CORNERING. Roadcraft Chapter 10

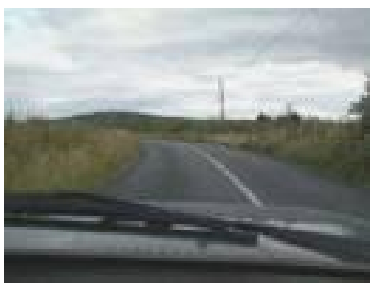
Correctly assessing the severity of the bend is essential for safety.

- Make sure that your vehicle is in the correct position on the approach
- Travel at the correct speed for the corner or bend
- Use the accelerator to maintain a constant speed through the bend
- Be able to stop safely within the distance you can see to be clear on your own side of the road.
- On an unfamiliar bend use observational links & be prepared if necessary to adjust your steering as you travel around the bend

Limit point analysis for corners and bends: Roadcraft (p184/190**)**

The limit point of your observations is the furthest point along the road to which you have an uninterrupted view of the road surface and is where the nearside and offside verges *appear* to meet to form a point on the surface of the road. This intersection is known as the limit point. The speed and direction of this point is important because it helps to determine the severity of a corner or bend. If the limit point continues to move away from you then you know that your speed is correct. If, however, the point appears to come back towards you or remains static then a reduction in speed is needed.

System commentary for corners and bends on the open road where the National Speed Limit applies



Left-hand bend speed is correct on approach

"Taking & Using information, (Driver/offside mirror) my position will be to the offside /central and watching the limit point. The limit point ***is*** moving therefore my speed is correct and maintaining a constant speed to negotiate the bend. Taking & Using information, (Driver/ offside mirror) the road ahead being clear, my position is central and accelerating from the hazard".

Left-hand bend speed is *not* correct on approach

"Taking & Using information, (Driver/offside mirror) my position will be to the offside /central and watching the limit point. The limit point is ***not*** moving reducing speed by acceleration sense/braking. The limit point is ***now*** moving therefore my speed is correct and maintaining a constant speed to negotiate the bend. Taking & Using information, (Driver/offside mirror) the road ahead being clear, my position is central and accelerating from the hazard"..

Right-hand bend speed is correct

"Taking & Using information, (Driver/nearside mirror) my position will be to the nearside/central and watching the limit point. The limit point ***is*** moving therefore my speed is correct and maintaining a constant speed to negotiate the bend. Taking & Using information, (Driver/offside mirror) the road ahead being clear, my position is central and accelerating from the hazard".

Right-hand bend speed is not correct

"Taking & Using information, (Driver/nearside mirror) my position will be to the nearside/central and watching the limit point. The limit point is ***not*** moving reducing speed by acceleration sense/braking. The limit point is ***now*** moving therefore my speed is correct and

maintaining a constant speed to negotiate the bend. Taking & Using information (Driver/offside mirror) the road ahead being clear, my position is central and accelerating from the hazard".

Important: You should *not* adopt the above nearside/offside positions for corners and bends when:

a) When the road has insufficient width to gain any vision advantage.
b) speeds are low e.g. 40mph or below and no advantage to be gained
c) nearside dangers present e.g. broken road surface, junctions or pedestrians
d) offside dangers present e.g. opposing traffic
e) may be misleading to other drivers/riders

'***Always prioritise safety over position***' *Roadcraft* (p164)

OVERTAKING: Roadcraft Chapter 11
There are three types of overtaking manoeuvre:
a) overtaking a moving vehicle on the offside
b) overtaking a stationary or parked vehicle, a rider or an object on the offside
c) undertaking on the nearside.

Overtaking a moving vehicle on the offside is one of the highest risk manoeuvres for both drivers and riders because it can put the overtaking vehicle into the path of oncoming traffic, often at high speeds. If there is a head-on collision, the speed of both vehicles combines to create a much more severe impact.

Before overtaking any other road user you must answer the following questions positively

- Is it safe?
- Is it legal?
- Is it necessary?

The Highway Code lists eight Overtaking rules *162 to 169* (*inclusive*)

Rule 167 of the Highway Code advises drivers and riders **NOT** to overtake when it might cause conflict with other road users, for example:

• approaching or at a road junction on either side of the road
• where the road narrows
• when approaching a school crossing patrol
• between the kerb and a bus or tram when it is at a stop
• where traffic is queuing at junctions or road works
• when you would force another road user to swerve or slow down
• at a level crossing
• when a road user is indicating right, even if you believe the signal should have been cancelled. Do not take a risk; wait for the signal to be cancelled
• stay behind if you are following a cyclist approaching a roundabout or junction, and you intend to turn left
• when a tram is standing at a kerbside tram stop and there is no clearly marked passing lane for other traffic

The basic, common sense message is; do not overtake unless you are sure you can complete the manoeuvre safely and without causing risk or inconvenience to another road user. Allow plenty of time for your journey, so you do not feel pressured to exceed speed limits or make risky overtaking decisions. If you are planning a route which includes driving on single carriageway roads, then plan a bit of extra time into the journey in case you do get stuck behind something.

Many automatic cars have manual gear paddles which allow the driver to nudge gears up or down. On occasions where it is safe, reducing the gear, without losing road speed, may provide additional torque to perform a safe overtake smoothly and efficiently.

Overtaking Commentary
In the absence of other hazards
"I have both views. Take, Use & Giving information, [if required], (Driver/ offside mirror and signalling) an overtake is on for one/two etc., vehicles, applying firm acceleration to pass safely. Taking & Using information, (Driver/nearside mirror) and returning to a central position / safety position / lane 1 or 2".

With other hazards
"Taking & Using information, (Driver/offside mirror) I am moving into an overtaking position*. I have a view along the nearside; Take, Use & Giving information (Driver/offside mirror signalling right) and moving out for a look. I now have both views; the Overtake is on for one/two etc vehicles, applying firm acceleration to pass safely. Taking & Using information (Driver/ nearside mirror) returning to the nearside without cutting in."

(An overtaking position is half the normal following position, which in good conditions would be a one second time-gap or, one yard/metre for every mph of the speed of your vehicle, however, it must be stressed that this position must* ***not* *be held for longer than is absolutely necessary when assessing if the overtake can safely be completed. If the overtake is not on, then you must drop back immediately to a safe following position.)*

An overtake must never be attempted unless it can be completed in 100% safety!

Commentary for changes in speed limit.

Approaching a sign with a higher limit
"Taking & Using information (Drivers mirror) I am/am not being followed, (Offside mirror) I am/am not being overtaken and as my vehicle passes between the signs I will firm on the acceleration."

Approaching a lower speed limit:
"Taking & Using information, (Driver/ offside mirror) my position is central and a speedometer check shows I need to lose (?) mph."

Phrases – Try to utilise these whenever suitable during your drive

- Plan to stop, look to go
- Early vision, early decision
- More paint, more danger
- Place (position) of safety
- Sacrifice speed for safety
- Slowly emerge, rather as suddenly appear
- Tyres and tarmac
- I can make some progress here
- Looking ahead I can see…. (Far, Middle, Near)
- Big and Bold with my position, telegraphing my intentions
- Losing vision so losing speed

DRIVING ON MOTORWAYS & MULTI-LANE CARRIAGEWAYS. Roadcraft Chapter 12

Driving on Motorways & multi-lane carriageways

- Keep left unless overtaking – return to the left-hand lane after overtaking
- Follow the two-second rule (in good weather) – give yourself enough time and space to react, and be aware of stopping distances.
- Adjust for the conditions – slow down and follow the four-second rule if the road is slippery or visibility is poor
- Control your speed – watch out for variable speed posted on signs or gantries
- Indicate in good time – before changing lanes
- Check your mirrors often – your situation will change quickly on the motorway
- Take cognisance of all gantry warning signs be ready to safely move to a different lane when instructed.
- Anticipate other vehicles joining or leaving at slip roads and ensure you take a safe position.
- In urban motorways on/off slip roads can be on the right of the carriageway.
- Take extra care around trucks and other large vehicles – if you can't see the driver he probably can't see you. Especially foreign trucks.
- Anticipate what's coming next – by sweeping the road ahead visually looking much further ahead, and regularly check your mirrors.
- Only use the hard shoulder (where present) for emergencies or if directed to do so by police, traffic officers or a traffic sign. (Highway Code 269)
- Take regular breaks – about every two hours, to stop yourself becoming tired at the wheel. Plan longer journeys so that you can take regular rest breaks.

You should also be familiar with what the Highway Code 2022 *(rules 253 to 274 inclusive)* has to say about driving on motorways.

Stopping on a motorway in an emergency where there is no hard shoulder or where the hard shoulder is being used as a running lane is covered in the Highway Code 2022 rules 270, 271, 277 and 278.